



Medical School Hotline

MD/PHD PROGRAM at the John A. Burns School of Medicine

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In Fall, 2001, the John A. Burns School of Medicine (JABSOM) gained approval from the University of Hawaii's Graduate Division to accept students for a combined MD/PhD academic program. This was another step to formalize acceptance of dual degrees within the medical school. Until 1998 students in the MD program were not allowed to enter a concurrent graduate program after acceptance and students already enrolled in graduate programs when they applied for the medical school were required to complete their academic degree prior to admission. In 1998 the policy was revised to allow some flexibility for starting or completing a degree along with the MD, but the combined degrees were not encouraged. There were a number of reasons for the policy that discouraged dual degrees. Most prominent among them were the School's emphasis on the development of physicians for the community and the unique structure of the medical school's problem based learning curriculum that made it difficult for students to pursue combined degrees. However, with JABSOM embarking on a new era that emphasizes excellence in research as well as quality medical education, it is anticipated that there will be an increase in medical school applicants interested in pursuing dual degrees and JABSOM wanted to be prepared.

Background

MD/PhD degrees grew from a perceived need to enhance the development of medical researchers. A recent review¹ completed in 2000, examined the expansion of combined degree programs from the mid 1960's. They noted that pursuit of research careers by medical school graduates was hindered by deficiencies in the basic sciences. This prompted the development of federally funded education programs geared to promote a background in the basic sciences relevant to medicine while providing a rigorous academic grounding. Graduates were to develop the skills necessary to conduct both basic and clinical research. The development of clinical investigators still did not keep pace with the advancements in the biomedical sciences and, beginning in the 1980's the development of combined degrees by medical schools increased, as did the funding to support these programs. Currently, a majority of medical schools in the United States offer integrated scientific and medical training programs. The National Institutes of Health (NIH) Medical Science Training Programs (MSTP) and others like it fund dual degree programs, with support for stipend, tuition, travel, equipment and supplies.

JABSOM MD/PhD Curriculum

The curriculum is structured in a two-three-two model. The first two years of the program are spent in the MD curriculum. During this

time, students may take elective course work in their graduate program. Following the first two years of the MD curriculum, a three-year block of PhD study is completed. This provides time for the completion of all core courses and research work for the dissertation. Typically, students will take a qualifying examination at the end of year one in the three-year PhD curriculum. At the conclusion of year two, they will complete a comprehensive examination and the third year will be devoted to work on the dissertation.

The program concludes with the final two years of the medical school curriculum. Some concurrent credit for research taken during elective time in the fourth year of the medical school curriculum may be available for students to complete all requirements relating to the dissertation. A one-credit journal/seminar course each semester is planned for all MD/PhD students. The course will allow all MD/PhD students to have a common core experience that promotes collegiality and provides student support. Students receive both the MD and PhD degrees at the end of the seventh year of the program.

Applicant Qualifications

Students interested in pursuing an MD/PhD generally have a strong background and prior experience in biomedical research. They are highly motivated, possess outstanding academic records, and have a mature focus of scientific interest. Candidates must fulfill all prerequisites and satisfy admission requirements of the MD and PhD programs and be accepted to both before they are considered for the dual program. Currently three of JABSOM's graduate programs are accepting applicants for the MD/PhD: Biostatistics and Epidemiology, Cell and Molecular Biology, and Tropical Medicine and Medical Microbiology.

Funding for the MD/PhD Student

A key element for attracting exceptional students for the MD/PhD is stable funding for both phases of the program. Currently students pay tuition during the MD portion and may apply for scholarships and loans offered by JABSOM to conventional MD students. During the PhD curriculum, the students are funded through grants or fellowships, which include tuition waivers. Students may be eligible for funding through the NIH National Research Service Awards (NRSA) program. To be eligible for these awards, students must be enrolled in a "formal" program that leads to the award of the MD and PhD. The student applies directly to the NIH for a grant and chooses the university they attend.

While NRSA individual predoctoral fellowships are an excellent opportunity for the student to direct their education by choosing their institution, it does not allow the institution to plan enrollment. For JABSOM to develop a successful program it needs to ensure that all students who are accepted into the MD/PhD have complete funding for both phases of the program. JABSOM intends to apply for an institutional predoctoral NRSA program. In these programs the institution is awarded the training grant and selects the students to receive the funding.

Future Development

The development of JABSOM's MD/PhD program will be a slow and deliberate process. Only two students can be admitted each year and at full implementation there will only be 14 students. While this may seem to be a small number, managing enrollment is important

so as to limit the impact of reentry into the third year MD curriculum. The first two students are currently in the MD phase of the program. Both had begun their PhD's in the Cell and Molecular Biology Interdisciplinary graduate program prior to application to medical school.

As JABSOM expands its research enterprise with the completion in 2005 of a new campus that includes a 212,000 square foot interdisciplinary research facility, opportunities for the JABSOM MD/PhD students will likewise expand. New research faculty will be joining JABSOM's cadre of exceptional scientists who will be advancing biomedical knowledge through the investigation of disease and its treatment. Students in the program will benefit from working with these scientists on the cutting edge of research. JABSOM looks forward to the challenge of providing the MD/PhD students an excellent medical education and a research experience that will set them on their course to function in both basic research and clinical investigation.

References

1. Arnold L, Roberts K. U.S. medical schools' combined degree programs leading to the MD and a baccalaureate, master's or other doctoral degree (2000). In Distlehorst LH, Dunnington, G, Folse, JR (Eds). *Teaching and learning in medical and surgical education: lessons learned for the 21st century*, (pp. 197-213). Mahwah, NJ: L. Erlbaum.



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